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NRO REVIEW COMPLETED

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Copy 6 of 13

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13 OCT 1970

MEMORANDUM FOR: Director, CIA Reconnaissance Programs  
SUBJECT: Program Progress Report

Forwarded herewith are three copies of the IDEALIST  
Program Progress Report for the period 1 July 1970 -  
30 September 1970.

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[redacted]  
HAROLD F. KNOWLES  
Brigadier General, USAF  
Director of Special Activities

Attachments -  
As stated [redacted] 6495-70)

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SAS/O/OSA: [redacted] (7 October 1970)

Distribution:

- 1 - D/CRP
- 2 - D/CRP
- 3 - D/CRP
- 4 - DDS&T Reg
- 5 - D/SA
- 6 - SAS/O/OSA
- 7 - D/O/OSA
- 8 - IDEA/O/OSA
- 9 - INTEL/O/OSA
- 10 - D/M/OSA
- 11 - R&D/OSA
- 12 - AMS/OSA
- 13 - RB/OSA

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Section 1

IDEALIST

DEVELOPMENT SUMMARY AND PROGRESS

(1 July 1970 - 30 September 1970)

I. AIRFRAME

A. T-35 Tracker - Several effective product improvement service bulletins have been issued since Hycon has taken over repair responsibilities for these units and their support equipment.

B. U-2R Flight Test and Operational Training Summary

	<u>1 JUL-30 SEP FLTS.</u>	<u>1 JUL-30 SEP TIME</u>	<u>TOTAL FLTS.</u>	<u>TOTAL TIME</u>
1 - 051	22	80.4	233	749.4
2 - 053	17	83.5	198	777.9
3 - 054	26	64.8	232	749.2
4 - 055	<u>32</u> <u>q1</u>	<u>103.2</u> <u>33.1</u>	269	857.4
5 - 057	44	154.5	323	1102.1
6 - 058	<u>52</u>	<u>158.5</u>	<u>321</u>	<u>1010.4</u>
<b>TOTAL</b>	<b>193</b>	<b>644.9</b>	<b>1576</b>	<b>5246.4</b>

II. PROPELLSION

Flight service evaluation of the improved engine combustion chamber sealed crossover tubes is progressing with the first installed engine nearing 150 hours operation at Detachment G.

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III. PAYOUT

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A. B-2 Camera - Three B-2 cameras have been brought out of storage and are now operational. The "H" camera [redacted] was borrowed temporarily for use on [redacted]

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B. IRIS II - An Engineering Change Proposal (ECP) has been approved that will equip all IRIS II cameras with a redesigned encoder electronics package to eliminate susceptibility to Electro Magnetic Interference (EMI) from TACAN transmission.

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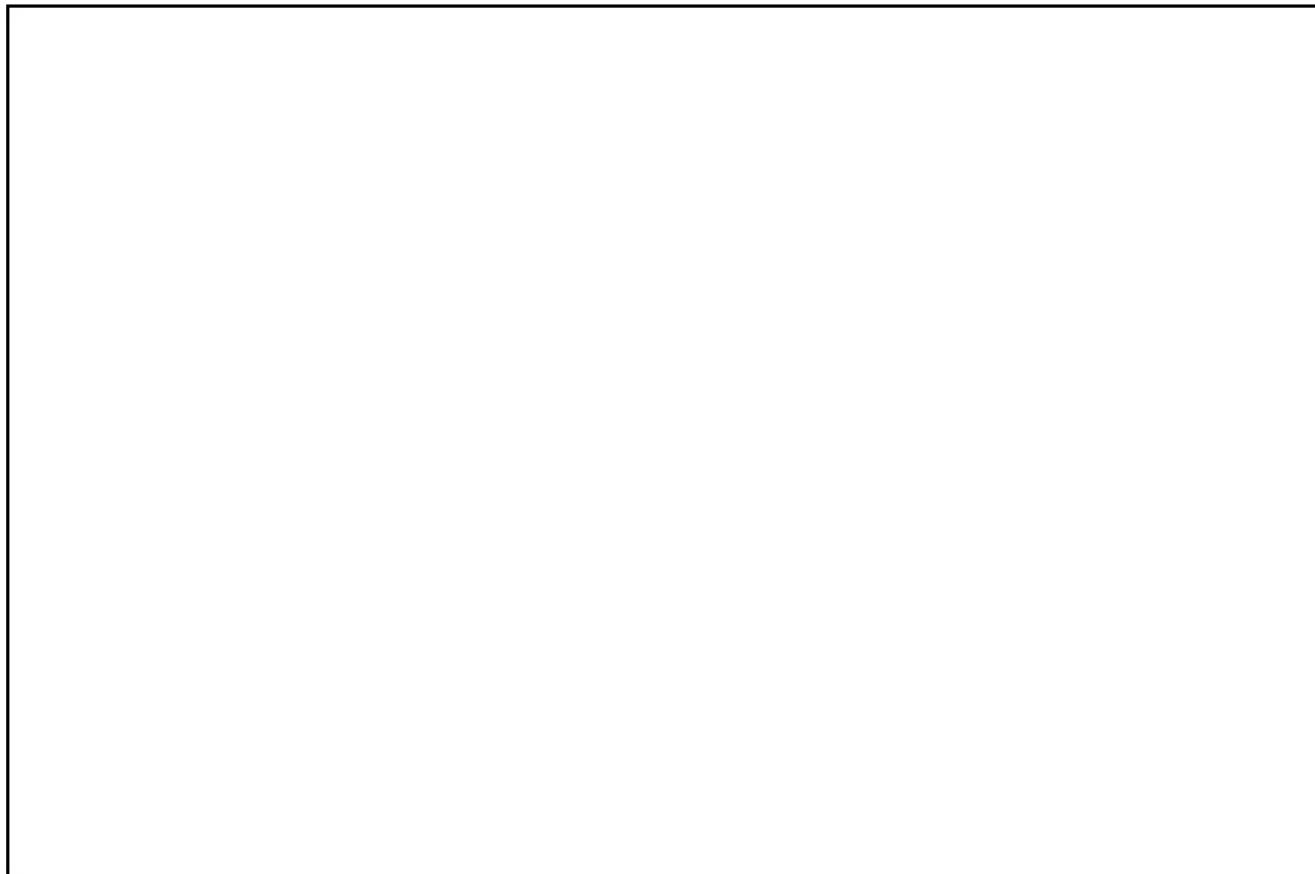
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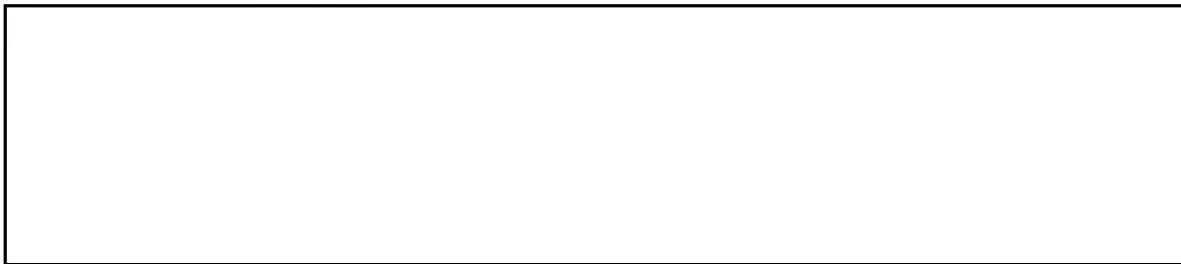
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V. RESEARCH AND DEVELOPMENT

A. General R&D



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B. General Studies

1. Improved U-2R Navigation System - The resubmission of the funding request for the improved navigation system was once again denied. This program will no longer be pursued.

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D. Apochromatic 24" Focal Length Petzval Lens

1. Purpose of this contract is to furnish NRO a 24" focal length Apochromatic-Panitek lens which will be incorporated into an existing DELTA III camera. This configuration will then be utilized to fully test and exploit the capabilities of any new color films programmed for satellite and aeronautical reconnaissance systems.

2. During this time period the following progress was made:

a. A DELTA III camera was furnished to Itek (West), Palo Alto, California. This camera will be modified to handle the increased length of the Apo-Paniteks lens. Nominal mechanical design is complete with the exception of lens cone length which is contingent on thermo-optical design.

b. Environmental data within Q-Bay (such as absolute pressure, relative humidity, temperature, and Carbon Dioxide and Nitrogen presence) furnished to Itek to refine basic optical and glass melt design.

c. Lens design and fabrication: Nominal optical lens design is complete, and mechanical and optical tolerances have been determined. Based on nominal design, preliminary drawings for cells and elements have been completed. Tooling and test plates for optical fabrication are 80 per cent complete. Determination of index of nitrogen vs wave length is 90 per cent complete.

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3. Last Project Status Report indicates Itek is holding to budget schedule. Glass blanks were due in to Itek 11 September 1970. New date is now 16 October 1970. This delivery slippage should not affect scheduled delivery of the overall system.

VI. AERO MEDICAL AND LIFE SUPPORT ACTIVITIES

A. Medical

1. [redacted] candidates are being considered for selection into the project during the fall of 1970. Interviews were conducted with these individuals in the Washington area during this reporting period by representatives of the Air Force Surgeon General's Office and project physicians. Wives of all four officers have now been interviewed by company psychologists. Final selection should take place during the last quarter of this calendar year.

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B. Life Support Equipment

1. Six-Line-Release-Proposal Meeting - A meeting was held at LAC, Burbank, California, on 25 September 1970 to discuss control of personnel parachutes while descending. A test program will be conducted using the S1010, Pilot Protective Assembly (S1010 PPA) and 901J (SR-71 Pressure Suit) to determine the feasibility and safety of this improvement in parachute design.

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2. U-2R Ejection System - The final Engineering Report has been received on the Engineering Change Proposal (ECP U-2R-45) seat-ejection tests through the canopy. The prime contractor does not recommend adopting the breaker bars to afford additional seating height for the tall pilots. These breaker bars will not be used. Sleeping bags will not be included except in isolated cases when flight will take place over extremely cold areas. Another change includes a device to be carried in the lumbar pad by which pilots can lower themselves to the ground after parachuting into tall trees.

3. Automatic Life-Preserver Inflators for S1010 PPA - Fifty automatic Life Preserver kits have been ordered from the David Clark pressure suit company. Installation of these kits will be accomplished in the field. Manual activation is still encouraged. However, if the pilot becomes injured or unconscious on bailout, the preserver inflation will occur on water contact.

4. U-2R Ventilation System - Testing of suit ventilation improvement has now been accomplished at both Detachments G and H and was successful. Installation of liquid oxygen coolers has been dropped from further consideration. The water separator will be by-passed at low rpm settings for pilot comfort during ground operation.

C. Training

1. Parasail, Tropical and Seacoast Survival Training

[redacted] - This training was conducted in two phases. Phase One was parasail conducted at Lake Okeechobee, Florida; and Phase Two was Tropical and Seacoast Survival Training conducted in the Everglades National Park, Florida. Performance of the two students was outstanding in every aspect.

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2. Physiological Training [redacted] - Physiological training including pressure suit chamber flights and explosive decompressions were accomplished [redacted] at Edwards AFB on 23 and 24 September 1970. Both S1010 PPA's fit well and no difficulties occurred during the training exercise.

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B. Five IDEALIST TACKLE operational missions were alerted during this period.

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[redacted] All missions were planned to operate a minimum of 20 nautical miles off the mainland China coast to comply with current restrictions. Following is a summary of the accomplished missions:

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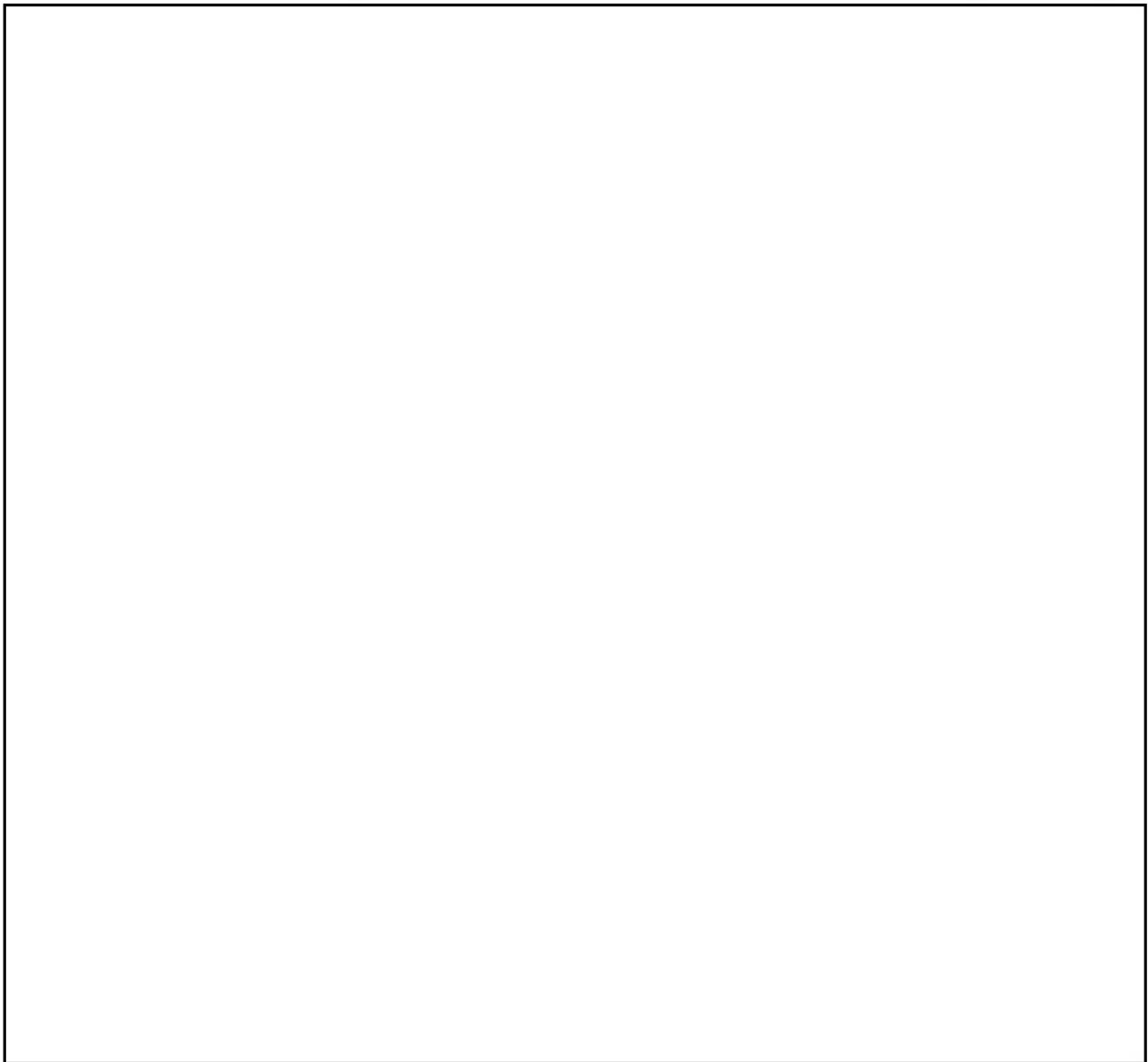
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II. GENERAL

A. BLUE GULL VI. Four U-2R pilots [redacted]  
4 were requalified for carrier operations aboard the USS Kitty Hawk off the California coast on 21 July 1970. Four sorties were flown.

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④ B. RED DOT. Film testing. One mission was flown in support of a continuing requirement to determine the usefulness of various film emulsions and filters under operational conditions.

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[redacted]

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④ D. IRIS II. Seven test and qualification missions were flown with this configuration.

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④ G. Hurricane Base Line. One mission was flown to obtain photographic coverage of the western U.S. Gulf Coast. The Office of Emergency Preparedness will use this information as base line photography for assessment of hurricane damage claims.

8

H. Mirror Landing Practice (MLP). Eighteen MLP sorties were flown in preparation for the BLUE GULL exercise. All carrier qualified pilots participated in these missions.

8

④ I. Camera Qualification ("A", "B", "H"). Eight test and qualification sorties were flown with these configurations.

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**III. PILOT AND AIRCRAFT STATUS (AS OF 30 SEPTEMBER 1970)**

**A. Detachment "G" (Edwards AFB - North Base)**

Aircraft	1 U-2R
	1 U-2C
	2 U-2G (flyable storage)

Pilots

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**B. Detachment "G"**

Aircraft

Pilots

**C. Detachment "H"**

Aircraft

Pilots

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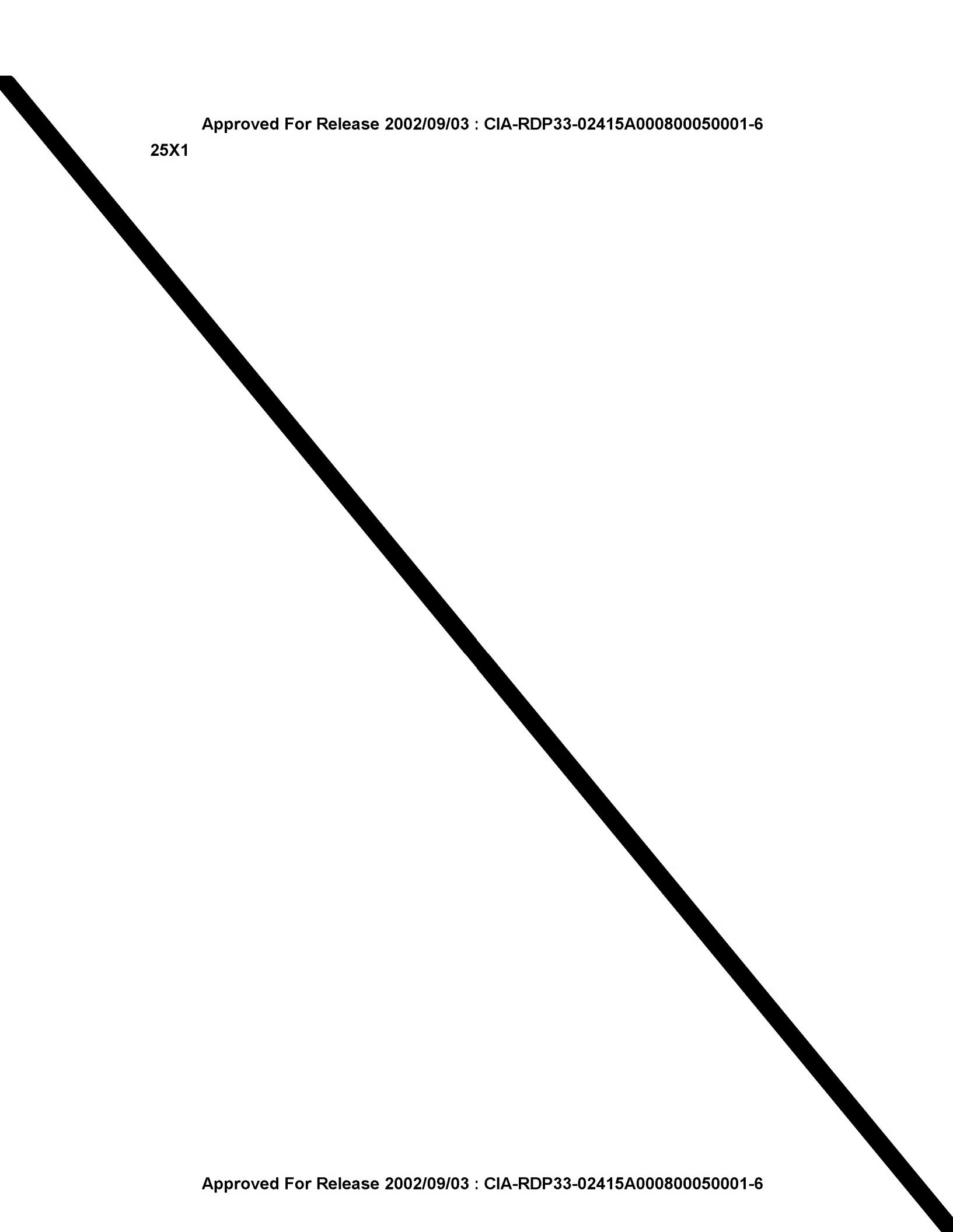
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